DOCUMENT RESUME

ED 449 082 SO 032 448

AUTHOR Brown, Kathryn
TITLE Unit on Mexican and Guatemalan Archaeology. Fulbright-Hays Summer Seminars Abroad Program, 2000 (Mexico and Guatemala).
SPONS AGENCY Center for International Education (ED), Washington, DC.
PUB DATE 2000-00-00
NOTE 36p.; Photographic slides not available from ERIC.
PUB TYPE Guides - Classroom - Teacher (052)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Archaeology; Area Studies; College Preparation; *Curriculum Development; Foreign Countries; High Schools; *Historic Sites; *Maya (People); Social Studies
IDENTIFIERS Fulbright Hays Seminars Abroad Program; *Guatemala; Mayan Civilization; *Mexico

ABSTRACT

This curriculum unit on Mexican and Guatemalan archaeology is designed for students at a college preparatory high school who have taken a course in ancient and medieval history. The unit lists history and archaeology texts and teacher resources and is divided into the following sections: (1) geography assignment on Mexico and Guatemala; (2) definitions related to Mesoamerican archaeology; (3) information and questions about three videos (a general overview; a video on Teotihuacan; a video on Tikal); (4) questions for articles on Teotihuacan (Carlson, John B. "Rise and Fall of the City of the Gods"; Fagan, Brian, Ed. "Prehistoric Times"); (5) questions for article on Tikal (Hammond, Norman "The Discovery of Tikal"); (6) notes for lectures at the sites of Teotihuacan and Tikal by Kim Goldsmith and Arthur Demarest in July 2000; (7) list of related articles; and (8) evaluation of the unit. (Contains a list of 10 related articles in "Archaeology" magazine, 3 related articles in "National Geographic," and 2 articles on Teotihuacan (in Spanish).) (BT)

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UNIT ON MEXICAN AND GUATEMALAN ARCHAEOLOGY

KATHRYN BROWN

FULBRIGHT-HAYES PROGRAM IN MEXICO AND GUATEMALA

SUMMER, 2000

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NATURE OF THE STUDENTS

This unit is designed for students at a College Preparatory High School. The students have taken a course in Ancient and Medieval History. This unit is designed for students who are sophmores, juniors, and seniors and who are taking a course in Archaeology.

The text used in the Ancient and Medieval History course is:

Howe, Helen. Ancient and Medieval Worlds. London: Longman, 1987. 406-413. (Classic Maya Period from 300-900 A.D.)

The texts used in the Archaeology course are:

Ceram, C.W. Gods, Graves, & Scholars. New York; Wings Books, 1994. 348-419. (History of Early Mayan Studies)

Fagan, Brian. Archaeology. New York: Harper-Collins, 1991. (Introduction to Archaeology)

Fagan, Brian ed. Prehistoric Times. New York: W.H. Freeman and Company. 1983. 1-14, 161-173, 213-235. (Articles on Tehuacán, Cuello, and Teotihuacán)

Teacher Resources include:

Coe, Michael. From the Olmecs to the Aztecs. New York: Thames and Hudson, 1999.

Coe, Michael. The Maya. New York: Thames and Hudson. 1999.

Pasztory, Esther. Pre-Columbian Art. London: Orion, 1998.

Schele, Linda and Friedel, David. Forest of Kings. New York: William Morrow, 1990.

Site Lectures By:

Demarest, Arthur A. on July 5,6,7, 2000

Goldsmith, Kim on July 25,2000

CONTENTS OF THE UNIT

1. Geography Assignment on Mexico and Guatemala

2. Definitions related to Mesoamerican Archaeology

3. Information and Questions about three videos
   A. a general overview
   B. AIA one on Teotihuacan
   C. one on Tikal

4. Questions for Articles on Teotihuacan
   A. Carlson, John B. "Rise and Fall of the City of the Gods." Archaeology 46 (1993): 58-69.
   B. Fagan, Brian ed. Prehistoric Times. New York: W.H. Freeman and Company. 1983. 213-223.

5. Questions for Article on Tikal
   Hammond, Norman. "The Discovery of Tikal". Archaeology 40:(1987): 30-37.

6. Lectures at the sites of Teotihuacan and Tikal by Kim Goldsmith and Arthur Demarest in July, 2000

7. List of related articles

8. Evaluation of the Unit

PARTS OF THE UNIT NOT INCLUDED

1. slide shows of the two sites

2. slide show of contemporary Mayan villages, markets, and religious sites

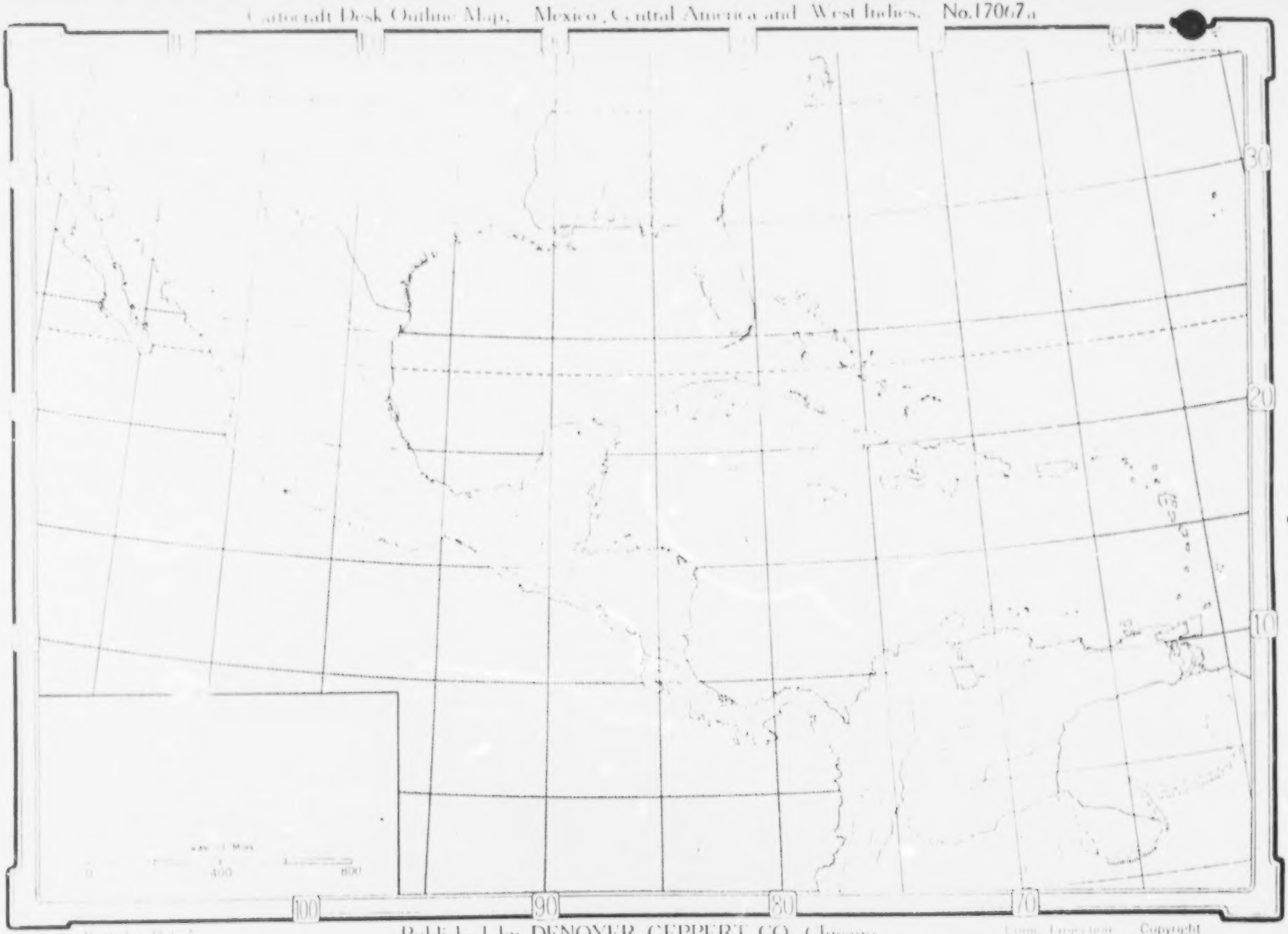
. . APTIFACTS FROM GUATEMALA TO SHOW STUDENTS

Monkey Mask
Wood Jaguar and Serpent carvings copied from temples.
Textiles
Carved Rabbits
Jadeite carved figurines

GEOGRAPHY ASSIGNMENT

Use an atlas to locate the:

Pacific Ocean
Caribbean Sea
Gulf of Mexico
Yucatan Peninsula
Isthmus of Tehuantepec
Sierra Madre del Sur Mountain Range
Sierra Madre Oriental Mcuntain Range
Valley of Mexico
Rio Grande River
Mexico
Guatemala
Belize
El Salvador
Honduras
Nicaragua
Costa Rica
Panama
Peten
Mexico City
Guatemala City
Site of Tikal
Site of Teotihuacan
Cholula
Oaxaca
Gulf of California
Isthmus of Panama



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SPECIFIC TERMS FOR MESOAMERICAN ARCHAEOLOGY

auto-mutilation
atlatl
astronomy
anthropomorphic
aquada
aerial photography
artisans
acropolis
anthropological analogy
artifacts
astrology
acidic soil
bas reliefs
Beringia
bar and dot numbers
bundle burials
copal
cinnabar
C.E. and B.C.E.
coup
cremations
chultun
corbelling
cacao
cenotes
codices
chinampas
ceramics
ceremonial bars
Classic
corvee
DNA
dynasty
deities
diffusion
dendrochronology
epigraphy
exotic goods
extended burials
features
flexed burials
frieze
graffiti
genealogy
hematite
hieroglyphs
inhumations
in situ
independent invention
jadeite
killed artifacts
katuns
linguistics
lithics

limestone
lintels
long count calendar
milpa
murals
monoliths
manos and metates
maguay plant
magnotometers
mosaics
malachology
midden
osteology
Olmecs
obsidian
Pre-Columbian
Popul Voh
Pre-Classic
Post-Classic
pothunters
polytheism
polygamy
puchtecas
patrilocal
patrilineal
projectile points
pole and thatch construction
primogeniture
phytoliths
pyrite
primary burials
rubble construction
religious calendar
radiocarbon dating
roof combs
survey
stratigraphy
shamans
secular or solar calendar
sweatbaths
scrimshaw
secondary burials
stucco
sherds
stelae
slash and burn agriculture
trenching
terracing
Toltecs
tropical rainforest
tablud/tablero architecture
topographic maps
zoopomorphic

VIDEOS

City of the Gods. Dir. Nicholas Valcour. Discovery Communications, 1993.

Maya Lords of the Jungle. Public Broadcasting associates, 1995.

Tikal An Eternal Imprint in Our World, Dir.Emma Quintana, Maya Films, 1991.

Study Questions for Maya Lords of the Jungle Video

1. What are five types of features found at Maya sites?
2. Why are potsherds at Mayan sites very important to archaeologists?
3. Why were the Spanish less interested in Mayan sites than they were in Aztec and Incan sites?
4. How can anthropological analogy be used at Mayan sites?
5. Who was Diego de Landa and how did he help archaeologists?
6. Who were John Lloyd Stephens and Frederick Catherwood?
7. How did views of the archaeologists change in regard to the Maya after the 1950's?
8. What made the archaeologists believe they had found a marketplace at Tikal?,
9. What type of writing did the Maya have?
10. When was the Mayan Classic Period?
11. What are the problems with slash and burn agriculture?
12. What information did soil samples or sediments in the Yucatan reveal to archaeologists?
13. Besides agriculture, what other economic activites were occurring in the Yucatan?
14. How do archaeologists know that there were different social classes in the Mayan civilization?
15. What methods of dating can be used on Mayan sites?
16. How have archaeologists determined that different types of agriculture were used in southern tropical rainforest areas of the Maya than those used in the Yucatan Peninsula?
17. What crops did the Maya grow? What crops do they still grow?
18. What were the major trade items of the Maya?
19. What rituals are shown on Mayan pottery and murals?
20. What are codices? Why are there so few of them?
21. What is significant about water lilies and fish?

Notes on Maya, Lords of the Jungle Video

It shows sites of Tikal, Palenque, Lamani.
It discusses Bishop Diego de Landa, John Stephens and Frederick Catherwood, Alfred Maudslay.
It discusses mathematics, astronomy, and hieroglyphs.
It discusses different social classes.
The Tikal Project by the U.PA. is highlighted.
Tikal is compared with Rome at this time.
A variety of house types and ceremonial structures is shown.
Linda Schele discusses inscriptions at Palenque and tells us the history of that site.
By 900 C.E. the Classic period had ended.
Trash accumulated at the sites, population decreased, temples were not being kept up by the people.
Reasons for the collapse are unknown but theories about overpopulation, ruining the land by slash and burn agriculture, and disruption of trade are possibilities.
Exotic goods include obsidian and jade which are 500 miles away from the Yucatan area. Sea shells and salt were also important.
Pottery seriation may be used for dating.
The chinampas style of agriculture was practiced at Pull Trouser Swamp site in Belize.
Crops included corn, yucca, Chiles, and the surplus was exported.
The early site of Cuello is shown.
The Late preclassic site of Cerros is shown.
Tikal is located on the New River.
It is a center of trade between the Gulf Coast and the Caribbean.
Salt was exchanged for corn or chiles.
It is not feasible to excavate this whole site.
They have tunneled through some ceremonial buildings.
Pottery and graffiti show scenes of injecting, drinking, and smoking hallucinogenic substances.
Pottery also shows scenes of bloodletting& decapitation.
Symbols include water lilies, jaguars, and bats at Tikal.
Today the people in the area use raised fields, have local markets, make blood sacrifices of animals and sacrifices of maize, and they also do ceremonial drinking.
The Spanish were never interested in this area because they found no gold here.
Mexican agricultural colleges are now studying their methods of farming.

CAUTION: Arthur Demarest disagrees with this video's views of the theories about trade for Tikal and the reasons for its decline.

Study Questions for City of the Gods Video (Teotihuacan)

1. Where is Teotihuacan?
2. How did the Aztecs regard Teotihuacan?
3. When did the city exist as an urban center?
4. Why did archaeologists make a great effort to excavate and restore the city in the early 20th century?
5. What were four types of features found at this site?
6. How large was this urban center in population?
7. What were two reasons why this site became so important economically?
8. What did archaeologists discover under the Temple of the Sun in 1971? What natural event made this discovery possible?
9. What deities were worshipped at this site?
10. What kind of sacrifices were made to these deities?
11. What other areas in Mesoamerica did this site have trade with? What evidence exists for this trade?
12. What do skeletal remains of the last stages of the city indicate?
13. What evidence exists that indicates the site was destroyed by fire around 750 A.D.?
14. What are some possible theories about why the site was destroyed?
15. Is there any evidence of writing at this site?
16. What evidence of astronomy exists at this site?
17. Who was Quezalcoatl?
18. How large an area does this site cover?

NOTES ON THE TEOTIHUACAN VIDEO

The site is located 30 miles northeast of Mexico City.
At its peak, it was larger than Rome.
It was excavated in 1910 to celebrate the centennial of Mexico's independence and to celebrate Porfirio Diaz's 80th birthday.
They wanted to restore the Pyramid of the Sun.
They used mule trains to haul away the dirt.
The pyramid was 20 stories high.
It was painted.
A child was sacrificed at each corner.
In the 1960's the Mexican government restored the Pyramid of the Moon.
It was 15 stories high.
There was a survey and mapping of the area at this time.
The site was 12 square miles.
There were many apartment houses.
People lived in family or artisan groups.
There were as many as 200,000 people there.
There were high quality murals on the walls of the apartments, not just on temples.
Many of the scenes were mythological and were not anthropomorphic.
Figurines of ordinary people show everyday life.
There were 150,000 of them found.
The earliest ones were of pregnant females.
They were found in houses and must have been used in household ceremonies.
The site was occupied for 1000 years.
There was no writing found there.
The site was located in a very fertile and well-watered valley.
It was close to obsidian sources.
In 1971 there were heavy rains and a tunnel in front of the Pyramid of the Sun was discovered.
This tunnel was centered on a cave, which was considered the sacred area where the ancestors first appeared.
Their deities were many.
A goddess, who was both violent and life giving was found.
The storm god was found.
The plumed serpent god of the winds and war was found.
There is a rainy and dry season in this area.
At the Temple of Quetzalcoatl, 3 burials of 18 men were found.
The men wore necklaces of human jaws. Some were copies of and were made of shell.
Some were flexed burials and some had been bound with their hands behind their backs.
Their were looters at the site in ancient times.
When the pyramid was built, there were 200 sacrifices.
There are clues to the collapse of the site.
In 1975 a site 80 miles north was found.
There was a mural similar to the one at Teotihuacan.
Human sacrifices were shown and the planet Venus was represented.
On a small chamber's floor, Teotihuacan's name was found near where the sacrifices took place. Venus was associated with human sacrifice.
Teotihuacan was burned about 750 C.E.
600 or so temples were destroyed.
Sanctuaries were found with items strewn about.
The buildings were of stone and wood.
Red marks on the rocks indicate evidence of carbonized wood.
Osteologists tell us that bones of the people showed signs of dietary stress.

There may have been an internal revolution.
There were many foreigners from other cities, such as Oaxaca and Tikal.
Other cities practiced similar religious rites.
Quetzalcoatl and the Storm God were associated with human sacrifices and 200 soldiers were sacrificed there.
Hundreds and even thousands may have been sacrificed.

Study Questions on the Article, "Teotihuacan" in Prehistoric Times

1. What was significant about this site?
2. List and describe four features that have been reconstructed at Teotihuacan.
3. What do topographic maps indicate about the city?
4. How do archaeologists obtain information about the religious/ political system in this city?
5. What is the function of the feature called the Citadel?
6. What is the function of the feature called the Compound?
7. Why was the location of this site important?
8. What was the housing in Teotihuacan like?
9. What kinds of building materials were used at this site? What kinds of tools were used?
10. What kinds of artisans were there at Teotihuacan?
11. What indicated that there were many foreigners there?
12. Where was Tikal? How far away was it? What evidence exists to connect these two cities?
13. When did the city exist? When was its peak?
14. What happened to the military in the 5th century C.E.?
15. What evidence do the archaeologists have of the city's decline?
16. How were the deities in Teotihuacan represented?
17. Describe the city's defenses.
18. What factors contributed to the decline of this city?
19. What happened to other urban centers around 750 C.E.?

Study Questions for the Article "Rise and Fall of the City of the Gods"

1. Where is the site of Teotihuacan located?

2. What are the three features that have been excavated along the Avenue of the Dead?

3. What was the function of the Cuidadela?

4. When was this site occupied?

5. What was its importance afterwards?

6. What other Native American groups traded with Teotihuacan?

7. Why does the author believe that warfare and ritual sacrifice took place here?

8. What evidence does he give for his theory?

9. Where did the Zapotecs live?

10. Where did the Maya live?

11. What was the significance of the Feathered Serpent deity?

12. What information can be obtained from the murals at the site of Cacaxtla?

13. Why was the site of Teotihuacan important? (4 reasons)

14. Where was Cuicuilo? What happened there in 100 B.C.E.? How did this affect Teotihuacan?

15. What was important about the location of the Pyramid of the Sun at Teotihuacan?

16. What is the theory of Peter Furst and Esther Pastory about this site?

17. What is the Cerro Gordo?

18. Why is this site so unique?

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page 2 for the "Rise and Fall of the City of the Gods"

19. What is the astronomical significance of the location of the Pyramid of the Sun and the Temple of the Feathered Serpent?

20. What features are found in the Cuidadela Complex? (List 4)

21. What plans did the people at Teotihuacan make with regard to the San Juan river?

22. Between 200 and 600 C.E., what kinds of building efforts took place at this site?

23. List four trading partners of Teotihuacan?

24. What kinds of exotic goods were traded? (List 11)

25. What do the residential complexes tell us about this site? (List three things)

26. When and why was this site first excavated?

27. Who was Bernardino de Sahagun?

28. List three codices that give us information about this site.

29. What was discovered in the 1980's about the area around the Pyramid of the Feathered Serpent?

30. Why did archaeologists tunnel into the pyramid in the late 1980's? What did they find?

31. How will DNA tests be used on this site?

32. What evidence exists of the decline of this city in the mid 7th century C.E.?

33. What had happened by 750C.E.? What areas were not destroyed?

34. What do the murals indicate about this site?

35. What is the significance of the colors, red and blue?

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Notes from Kim Goldsmith on July 25, 2000 at Teotihuacan

Kim has worked at this site for the past 20 years.
This is the largest and most visited site in the Americas.
This site is located 30 miles north of Mexico City.
From 150 B.C.E. until 650 C.E. this site was the largest city in the world with as many as 200,000 people.
After 750 C.E. there was a gradual decline of the population as people went to other areas, but the site was never abandoned and as many as 5,000 people lived there.
Aztecs regarded it as a sacred site when they came into the area from the north around 1200 C.E.
Montezuma came to the area every month (20 days) but the Aztecs did not re-populate it.
It was a civic and ceremonial center and the people there were taxed by the Aztecs.
The circumference of the area is about 8 miles around, but only about 10% of the area has been excavated.
There is poor preservation of organic remains in the area and about 80% of the organic remains have been lost because of the climate.
It is not known where the Teotihuanacos came from or where they went.
It is believed that they had writing but it has not been found yet.
Major temples are the Pyramid of the Sun and the Pyramid of the Moon.
A major street that has been excavated is the Avenue of the Dead.
There are many multi-family dwellings there. There are about 2,000 of them and Rene Millon estimates that 100 people lived in each.
Tablud/tablero style of architecture began here and was imitated in other places, including the Temple Mayor of the Aztecs at Tenochtitlan.
The original archaeology was done here in the 1920's and involved reconstruction. After the 1960's the Mexican government stopped reconstructing and consolidates or preserves only.
The structures were symmetrical and covered with stucco and painted.
The center of the walls was rubble and even includes trash that is important to the archaeologists.
The stucco was made by burning limestone and mixing it with water.
There are red traces on the walls from the hematite paint that was original.
The whole valley was originally an oak and pine forest.
The inhabitants planned the city and deforested the valley at one time.
They laid out a drainage system.
The city was laid out on a north and south grid system. They knew about engineering, trigonometry, and zero.
They had come from a civilized area.
In 900 years there was never any urban sprawl.
The first pyramid was built in the first 25 years The pyramid of the moon was built in 50 years and that of the sun in 75 years.
There were no gardens, grass, or trees in the city.
It is believed that the Citadel was a center of power.
There are many temple bases and remnants of walls indicating they were more temples.
There was a non-defensive wall around the sacred areas.
There were staircases to upper floors of the apartment compounds.
Kitchens and servant quarters were located together.
There are no stelae or writings on the stone walls.

page 2 of notes from Kim Goldsmith

Murals are on the walls but do not give a clue as to who ruled the city.
It is not known what caused the city to decline.
Obsidian blades do not indicate that outsiders attacked & it is doubtful that environmental destruction caused the decline.
One possible theory is that inner turmoil led to revolution.
The pottery and figurines were very standardized and perhaps there was a lot of internal oppression.
At the end of the 650-750 C.E. period there was mass destruction by intentionally set fires and the ruling class was wiped out.
Other cities also fell at this time.
Living quarters near the pyramids seem to have been for guards.
Excavations here found decapitated and dismembered individuals.
The murals seemed to be for public propoganda.
Obsidian is very common in the area. There is still a mine.
There seems to have been no use of the wheel except in small toys of clay.
Kim thinks there probably were wheels but they were of wood and have decayed. They did not have beasts of burden.
They used a lot of fine wood in the city.
About the time of Christ until 400 C.E. they built pyramids in front of other ones. Heads are found all around the one in back. They stopped the maintenance of the one in back and wind and water erosion made many heads fall off.
These people used no stone tools for carving the rock.
Scavanger cultures did come in and use stones from the earlier civilizations.
Their drains had stucco underneath the buildings.
They had cylinder toilets that fed into the drains.
The most excavated areas in the last 20 years has been the area between the two temples.
Decorations include shell images from the coast area indicating trade.
There are artifacts here from other areas and their artifacts are found in other areas as well. This includes Belize, Honduras, El Salvador, and Costa Rica.
There is no sign of human sacrifice here. (at this pyramid)
There are burials between the two pyramids.
There is evidence of a show of force.
Tribute was probably paid in agricultural goods.
Animal decorations were a composite of jaguars, birds, and snakes.
A mythological character was the feathered serpent body.
Tlaloc was a deity shown by goggles and fangs.
He is important to the first day of creation in their calendar.
There were two calendars.
References to these two calendars were made in burials and buildings.
Walls of the temple and murals showed mouth masks and headresses.
In the 1980's they found a skeleton with his hands behind his back in this temple.
In 1988 National Geographic and the National Museum found a looters' tunnel that led to 20 male skeletons and offerings in the center of this pyramid.
Base of the Pyramid of the Sun is the same size as Khufu or Cheop's Great Pyramid in Egypt.
Pyramids in Mexico were dedicated. Victims of sacrifice were found around the outside of the buildings.
Pyramid of the Moon was excavated by team from U. of Arizona.
They tunneled into the pyramid and found 4 male sacrifice victims.
These pyramids were in layers. This one was built over 7 times.

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page 3 notes from Kim Goldsmith

Technology here included cord.
At Tule, a Toltec center, rollers used are shown.
One of the living compounds at Teotihuacan has outer walls of 60 by 80 feet.
There is a central, unroofed patio.
There were no windows but each room had a porch that was roofed. There are curtain rings on the walls.
The floor plans indicate that an extended family lived there.
There are 2000 living compounds at Teotihuacan.
They probably spent a lot of time outside and only slept there.
There was a mural from the floor to the ceiling that showed men playing games.
There was another building 8 meters by 4 meters that could have had 4 people living there or it could have been for animals.
There was no ball court at this site, but one mural shows a ball game, but it was different from the ball courts at Mayan sites.
Neighborhoods were mixed. Homes of the wealthy were beside those of the middle class and those of the poor.
At the museum there is charred cloth of maguay fiber.
The site was too high for them to grow cotton there.
They could have made paper from the maguay fibers.
There were millions of figurines. After 350 they made them from molds.
Her dissertation is on these figurines.
There seems to be continuity from the earliest to the latest periods.
A monkey image was found, although there are no monkeys there.
Greenstone was found. There is jasper and serpentine, but no jadeite.
In burials there were mouth masks and obsidian from the volcanoes.
There were braziers for burning copal or pine resin.
Butterflies and owls were associated with death.
There was manufacturing in the servants area that was preserved at the time of the fire.
Aerial photos were taken in 1960.
To build large buildings, they dug down to the bedrock.
They re-routed the San Juan River through the city.
They built a bridge in the center of the site.
From osteology they have discovered that their were patrilocal clans there.
In the male burials around the Temple of Quetzalcoatl, they have found collars of shells representing teeth.
These were also found at Monte Alban so DNA tests are being conducted to see if the Teotihuanacos and Zapotecs were related.
Cinnabar was used by the Maya on their sacrifice victims and it goes to the bones. It was also used here.
They found an oak scepter under a stone that had kept the air from it.
This is the only wood they have found.
The Pyramid of the Sun is 62-64 meters high
In 300 B.C.E. the population of 300,000 doubled as others came from a nearby site that had been destroyed by a volcano.
In 1905-1910 they were trying to excavate this site for the centennial of Mexico's independence and used dynamite on a pyramid.
They blew up the top three meters of the pyramid and now it is impossible to determine how many layers there were.
Cholula is the biggest pyramid.

KCGPHD@hotmail.com

Kim Goldsmith
AP 164
San Juan Teotihuacan
Edo. de MEXICO 55800

QUESTIONS FOR THE ARTICLE, "The Discovery of Tikal"

1. Where was Tikal located?

2. When did the site reach its peak?
   When was it abandoned?

3. How did this site first come to the attention of scholars?

4. When did Mexico become independent?

5. Who was Eusebio Lara?

6. When was the Mexican War with the United States?
   What did Mexico lose in that war?

7. Why was it and is it difficult to get to Tikal?

8. When was the Great Plaza built?
   What two features were explored by this early party?

9. What kinds of wood remains did this party find?

10. What were six things that impressed Mendez about this site?

11. Why are some of the stelae and lintels in Basel, Switzerland?

12. What was important about Alfred Maudslay?
    When was he at Tikal?

13. When did Guatemala become independent?

STUDY QUESTIONS FOR THE TIKAL VIDEO

1. Where is the site of Tikal located?
   What is the Peten area like?

2. How big is the site of Tikal? How much of it has been excavated?

3. When was Tikal discovered? When did most of the excavations take place?

4. What did the people of Tikal write their hieroglyphs on?

5. What was important about the door lintels at Tikal?

6. What kinds of skills and knowledge did the elite class of priests and nobles have to have?

7. What were four types of features found at the site?

8. What types of materials were used to make Mayan artifacts?

9. Describe the palaces. Did people live in them?

10. Who was Teobert Maler?

11. What is shown in the graffiti on Maler's palace?

12. What information may be obtained from the stelae in the northern acropolis?

13. For how long was the northern acropolis used? How was it modernized? What care did the Mayans take when modernizing this area?

14. What material was used for building the temples and palaces at Tikal?

15. What kinds of art decorated the buildings?

16. What was the purpose of the platforms or terraces?

17. What term would describe the government of Tikal?

18. What evidence of food storage was found at Tikal?

19. When Tikal was at its peak, what was happening in western Europe?

20. What is significant about the number of 9 pyramid complexes?

21. What is a katun?

22. Which part of the site is the oldest part excavated so far? How old is it?

23. Describe the Mayan arches.

24. What image is shown on the image of the Mayan arch?

25. What can be learned from studying ceramics?

26. What kinds of grave goods were found in the tomb under Temple I?

27. List five achievements of the Maya.

28. What do we know about the origin and disappearance of the Maya?

NOTES ON THE TIKAL VIDEO

Tikal is located in the Peten area of Guatemala.
It is 2500 years old.
4,000 structures have been found.
Only 1/10 has been excavated.
It was discovered in 1848.
It became a national park in 1955. This protects the flora & fauna.
In 1956 the University of PA. began an 11 year study of the site.
Hieroglyphs were written on stone and tree bark.
The ceiba tree was a sacred one.
Door frames had wood that was carved, also.
In 1979 this site became a UNESCO monument.
The Maya still are very religious and involved with the natural world.
The elite knew about astronomy, eclipses, horoscopes, and lived well.
There were palaces, temples, observatories.
They had hieroglyphic writing and a calendar system.
The central acropolis covers 4 acres and has 6 courts surrounded by palaces. There are stairways and passageways.
They had artifacts of flint, jade, shell, pyrite, and obsidian.
They made mosaics.
They lived in extended family groups.
In 650 C.E. they built a five story palace by a ravine that was filled with water.
Teobert Maler lived here between 1895 and 1905 when he studied the site.
There is graffiti that shows ceremonial scenes.
The observatories cannot be explained very well.
The northern acropolis is the most complex.
Stelae and altars tell the dynastic history.
There are 12 layers of construction.
The oldest building is from 200 B.C.E.
This is early classic architecture.
There are masks of the gods preserved below.
There is a priest's burial there. (followers were sacrificed and there are turtles and a crocodile.)
The site was used for 1000 years.
There is a giant jaguar temple with a carved wooden lintel.
The temple is in limestone.
It was built around 700 C.E.
There are 9 terraces.
There is a roof comb. It is decorated with serpents.
Temple II has three terraces.
Terraces were used as platforms for the priests.
There are masks on the platforms.
Temple III was built in 110 C.E.
It has an obese woman with a jaguar skin on it.
The temple of the inscriptions is covered with hieroglyphs.
It is a Late Classic Temple.
There are crossbones, skulls, skeletons, and human heads on it.
There are 3 sub-terranean caves for food storage in the gallery.
The tallest temple is #4.
It was built in 742 C.E. when Europe was still in the Dark Ages.
There are 9 pyramid complexes.
One was built at each katun (20 years).

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Each complex has twin pyramids with stairways.
9 stelae are the eastern side and face the west.
Many pyramids are still buried.
The palace has 9 doors.
There is an enclosure with only one door to limit access to it.
There is no substructure or roof.
Mayan arches were sculptured and had names of rulers on them.
Bound individuals were shown on altars.
Mundo Perdido was built 600 years before Jesus in the Pre-Classic Age.
There is an astronomical observatory with a western platform.
There are 38 different buildings with different purposes.
This is one of the oldest structures.
Their calendar was ahead of those of the Babylonians and Egyptians.
In 1958 in a well under temple I they found a rich tomb.
It had jade, alabster, pearls, and 98 scrimshaw bones.
One of the most beautiful stelae was #31 with 213 hieroglyphs.
The origin of the people here is lost and so is their demise.
National Geographic has tried to make a picture of what it once looked like.

July 5,6,7, 2000 Lectures by Dr. Arthur Demarest at Tikal

7/5 Introduction

Tikal was excavated in the 1950's and 60's by the U. of PA.
The typical arrangement was a courtyard with 3 or 4 houses.
People were buried on the east side of the floor of the house.
Temple I is from a King from 683-720 and was not excavated.
The temple of his wife is right across the courtyard.
The Mayans practiced ancestor worship.
There was a palace on the south side of the central acropolis.
There were reservoirs. Stones were quarried and they were lined with clay.
Behind the southern acropolis was a hill.
The oldest area was from 1000-800 B.C.
Between 340 and 350 A.D. they shifted to other areas.
Everything had symbolism. There were representations of the universe and the family.
Ceremonial centers grew from the houses
golden Age was 600-900 A.D. for Tikal.
In the last 15-20 years, deciphering the glyphs on pottery tells us who lived there.
The glyphs also indicate the causes of the collapse.
Many people believed there were not high civilizations in the rainforest.
There was not a separate secular and religious government.
The King was the shaman and the priest.
Between 760 and 900 A.D. there was a collapse in a dramatic way.
There was a blurred distinction between rural and urban here.
Today, the Guatemalan government has temples from Tikal on its coins and paper money.
The Mayans had many epicenters and causeways connecting them.
Lower level people maintained the upper classes.
Lintels had many carvings showing the King and jaguars.
Temple four is the highest one. It was built by the son of the ruler in temple I.
The Lost World (Mundo Perdido) was never excavated by U.PA.
Tikal is in a park. It is not primary forest but is still rainforest.
It is a refuge area for animals and birds because so much of the rainforest is being destroyed.
He likes the palace in the central acropolis.
Chichicastanango is an ancient Mayan ceremonial site.

7/6 First Visit to the site

The ceiba is the sacred tree of the Maya.
The king was pictured as a Ceiba tree.
It is shown in Mayan iconography.
Tikal Temple I has a platform for the ancestor shrine.
Temple I dates to 741
Four or five huts were around the platform. The person was buried under the floor on the east side with relatives clustered about. This area became a shrine.
The big temples just followed this pattern.
They burned copal and made sacrifices.
Bloodletting was thebest sacrifice for the poor and the rich.
They mined stone and built reservoirs lined with clay for water.
The palace was built along an artificial lake.
Tunnels go through the pyramids so they don't have to destroy the latest ones in order to get to the earlier ones.
There are burials on the southern side of the acropolis.
There were a series of palaces that date upto 800 A.D.

There were corbelled vaults in the palaces.
There was rubble fill with stone facing on the walls.
The surface was covered with plaster and painted.
There were stucco designs on the walls.
There were six or seven earlier palaces under this one.
It shows the ancient families from 600-900 A.D.
There was a ball court inside the palace. The king played.
Players played against death, but there was belief in reincarnation.
The ball was small and hard rubber.
Players wore cotton and wool belts and protected their heads and elbows. They played the ball off their waists.
There are ritual stone yokes or belts.
Ballgames were important all over Mesoamerica. The Olmecs had them.
They spread all over the Caribbean and into the southwestern U.S.
The Hohokem played them but the Anasazi did not.
Ballgames became an art form.
The ballgame was based on the hero twins story.
Time for the Maya was cyclical. Ours from the Sumerians is linear.
The E Group is early structures for astronomy and also astrology.
Their calendars were the most accurate ones until satellites were used.
They believed in 13 levels above ground and in 9 levels below ground.
The earth was on a crocodile floating on a lake.
The king's headress represented the upper levels and his foot was symbol of death representing the lower levels.
In the Lost World structure 9, there are 11 temples inside of it.
Murals are found inside.
Units of their number system were 20's, not tens.
They had a 360 day year.
There were 9 cycles of 400 years.
There were three cycles of 20 years.
The Maya Long Count measured from a certain date.
At the end of each twenty year period, they built temples here.
These were twin temples.
They have been restored but the jungle claims everything that is exposed.
The Maya were constantly rebuilding their sites and what we see now is the latest building.
From 300-900 they had the most hieroglyphs.
Their pottery is used for dating.
The Pre-Classic period was from 800 B.C. until 300 A.D.
A lot was happening before they had glyphs and polychrome pottery.
Tikal is mainly a classic site.
The Kings were in the north acropolis.
The Lost World was used for rituals.
These were theater states and the rituals held the state together.
The king was like the Pope and like a rock star.
Music accompanied the rituals.
Religion led to warfare.
The king did not have total economic power.
When sites are open for tourism, there must be constant re-surfacing.
When Arthur excavates they use artists because photos don't show detail.
He does not use computers to plot the site or to write with.
He publishes a lot.

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In 387 there was a coup here and King Jaguar Paw was killed by someone from the west called Smoking Frog. He may have been a general.
The glyphs are Mexican and this may have been invaders from Teotihuacan.
This happened to the whole area of sites even the small ones.
Mexican architecture was a flat frame over rubble.
The temples were painted beautiful colors and had a hut on top with a thatched roof representing the housing.
On the tops they imitated the huts with stone roof combs.
The book put out by the U.PA. is 20 years out of date.
The Yucatan from 700-1000 A.D. was the end of the classic, even at Chichen Itza.
Stele with altar stones tell of the king's history and are a place for offerings.
In the fourth century A.D. the style is Mexican.
Stele and altar # 11 in front of temple III. Temple IIIwas built in 810 and the Mayas were in decline by 830.
Diego de Landa recorded what he thought was their alphabet.
In the last ten years by comparing the stele with the writings of the conquest, they can decipher about 70% of the writing.
In this area is a giant house plaza with ancestors on the east side.
The tomb on the west can be climbed.
This is the epicenter of the site.
Worship back to 250 B.C. took place here. Each ancestor had a tomb.
First King of the Mexicans was dynasty 10.
Sacrifice was auto-mutilation.
Women pierced the cheeks, ears and tongues and the males the genitals.
They used obsidian blades.
They had lots of contact with Teotihuacan.
This was the principal area in 450.
Art shows ceremonies. They used jade masks and quetzal feathers.
Temple I is on the east.
King was represented as a tree.
In Copan the King dressed as a woman (18 Rabbit).
Massive bleeding leads to hallucinating.
Monuments are red representing the blood.
The Mexican dynasty king married the daughter of the previous king.
Their son was one of the greatest kings.
Their stories seem similar to southeastern Asian ones, whereas ours are more like the Sumerians.
Between 411 and 457 a great temple was built over this king.
From 535-682 there was a dark ages here as another site defeated Tikal.
In 682 the king re-took the site.
The king is shown on the throne with a jaguar over him.
The rainforest has a lot of diversity and the agriculture in this area did also.
There is not much of a market economy in the area today. It is mostly barter.
Swedish and U.S. money goes to save the rainforests here. They are using it for agriculture.
Today they use slash and burn agriculture but not before.
They only had stone axes.
Peten rainforest may be gone in 10 years.
Between 1000 B.C. and 1500 A.D. 10's of millions lived here.
Today 300,000 are demolishing the area.
Analysis includes phytoliths experts, phosphate analysis, and nuclear studies of pottery.

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411-457 there was a burial in the inner structure.
The temple was 25 meters high but it fell.
Motif of the temple was a sacred mountain over a cave.
They may have sacrificed royalty from other cities there.
The site Arthur Demarest is working on has a palace but no temples.
The burial site of the wife is the one that could be climbed.
There were 20 glyphs facing it.
Structure 33 fell down and now they tunnel under them instead of pulling them down.
The ball court here is a small one.
There is a special ballcourt for the king.
The Toltecs and Aztecs did the most sacrifices, not the Mayans.
There are names of the great kings and polygamous marriages listed.
Themes in his new book that will be out include:
It was atheater state, there was ancestor worship, and the rainforest was not being ruined, and the models are native Americans or Southeast Asians.
There were sweatbaths for ritual purification.
After the defeat of a king, there was a decline.
The Golden Age here is someone else's dark ages.
They opened wells to save rainwater.
Puuk was based on wells from 700-1000 A.D.
Here there was not a water problem as there was in the Yucatan.
There were fruit trees for an alcoholic beverage.
Milpa was not practiced here.
They exchanged maize, beans, squash.
Their diet was varied. They ate deer if they were of upper class.
Their trash pits are studied.
They had gardens behind their houses.
They had obsidian, chert, seeds, and sherds in the trash pits.
They lived in patrilineal clans.
The commoners had only 1 wife.
Their residences were for extended families.
They were patrilocal.
U.PA. said there was a marketplace but Arthur says no there was not one.
Luxury goods included Jade, polychrome ceramics, weavings, Quetzal feathers, pyrite mirrors.
Only the nobles entered the temples.
The queens helped the kings.
They got obsidian from the highlands.
They also used stingray spines or spondillas shells for bloodletting.
They used hematite or fake blood.
They carved on shells or jade.
Complex Q is a twin temple complex.
It was built at the end of a 20 year cycle.
Causeways connected it to the other complex.
This one was from 790 A.D.
The Long Count was from the beginning (our 3014 B.C.)
There was ancester worship
Time was cyclical.
Bloodletting called the spirits of the dead.
The twin complexes were for the spirits.
No one lived in the palace on the south. It had 9 doorways.
Major tombs were on the east and lesser ones were on the west.
Altars were in front of the twin temples.
The monument represented the 13 levels of heaven and there were 9

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levels below for the underworld.
There were 9 stelae and altars.
Turkeys were sacrificed and incense was burned.
Local people still do this.
There were five unlucky days at the end of the calendar.
The days at the end of the 20 year period were especially unlucky.
An important cycle was 13 times 256 of our years.
They had cycles of 400 years.
Arthur's theory is that polygamy led to too many heirs.
This led to competition between rulers for buildings and ritual.
This was so expensive.
POPUL VOH is like Gilgamesh.
It tells about Venus, the Sun, birth and re-birth of the king.
711 was an archaic style.
The head on the belt was an Olmec style.
The Maya collected Olmec items around 1100 B.C.
There was occasionally ritual cannabalism.
Sacrificial knives were found.
Number four is the largest temple at Tikal.
There is probably a tomb in the bedrock.
The lintels told about the ruler and are now in a museum.
The view in the past would have been fields and lakes in the forest.
Warfare was caused by competition among rulers.
Between 760 and 800 there was a collapse of other areas.
There was warfare between the centers.
Warfare cut off the flow of goods.
There were refugees.
The refugees from the war in Guatemala are ruining the rainforest here.
Commoners moved into the ruins. Pottery indicates this.
Post-Classic was 1000-1500 A.D.
They settled around the lakes and the population was only 10% of what it had been.
Malacology and soil studies indicate that the environment was being ruined.
There were migrations into Belize and the Yucatan.
This was in 800-1000.
There was a problem with water there.
The idea of divine kings disappeared.
Arthur does not believe the end was caused by drought.
There was a drought after 800 but the western Peten was so water-logged that the drought would help.
1050 Chichen Itza collapsed.
The drought was worse there.
The PA. theory is that Tikal was a marketplace between Mexico and the Caribbean.
Stingray spines, quetzal feathers, and obsidian were traded for salt.
But salt was not just available from the Yucatan.
The Maya were not dependent on trade.
The Mexican invasion theory is incorrect. New people moved in afterward.
The Maya fought with each other.
From 760-900 they stopped maintaining the sites.
There was overpopulation.
They were ruining the rainforest.
There may be bigger sites in Mexico and Belize.
Between 378 and 534 this was one of the most prestigious cities.
The temples are taller here.
In the Yucatan the architecture is finer.

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Copan had better sculpture.
Palenque is the most beautiful.
All of the temples can be used as observatories.
They can see sunrise, sunsets, equinoxes, and solstices.
Everything was done with human labor.
Mexicans all believed in the 52 year cycle with destructions.
They were in the fifth cycle.
This was the end of the universe.
There was a new fire ceremony.
Aztecs were more into this and the death of the sun than the Maya.
Maya history was not moved by the great kings.
There were conquest period stories also.
Areas in the highlands were hills, caves, springs as sacred.
This was also trueof the Indians of the southwestern U.S.
PA. studies killed the idea of vacant ceremonial structuresfor theMaya.
Peter Harrison of PA. excavated the palace at Tikal.
He found trash in the kitchens and he found bedrooms.
He studied the palace after the collapse when squatters ahad moved into the place.
He found burials and pots in the area.
Maler and Thompson ahd thought they were for rituals because they were too hot and no one could live in them, but they were built up high and got breezes and when the vegetation was cut they got more breezes.
G group palace is mostly not restored.
It is 2 and 3 stories.
Later palaces were more closed off from the people.
Maybe they were even defensive.
After 810 they were heavily occupied.
Peter Harrison said by squatters.
Graffiti found by the explorers showed the scenes of the collapse.
In the most restricted areas they did Mexican style sacrifices where they cut out the heart.

7/7 Museum Visit

Olmec scupture is not like the Mayan.
Maudslay explored 1848-1904.
Teobert Maler from 1895
Tikal Project from U.PA.
Stele tells how they were taken over by Mexicans.
Style is Teotihuacan.
Temples were bright red in color.
They had blue/green on the top.
Scrimshaw painting was done on bones.
There were lots of burial pots.
The glyphs told who owned what.
See Oct., 1989 National Geographic.

DR. ARTHUR A. DEMAREST
CATEDRATICO INGRAM / VANDERBILT UNIVERSITY
CATEDRATICO FULBRIGHT / UNIVERSIDAD DEL VALLE
ARQUEOLOGIA / ANTROPOLOGIA

Teléfonos
(502) 368-2573 (Casa)
367-0737 (Oficina)
403-7425 (Celular)
(001)-615-343-6124
(Oficina EEUU)

Avenida Las Americas
20-79, zona 13
Guatemala, Guatemala, C. A.

e-mail: arthur.a.demarest@vanderbilt.edu

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EVALUATION OF THE UNIT

Teotihuacan

Describe the geographical features of the site.
When was the site occupied?
What was unique about this site?
What archaeological techniques have been used at this site? (dating, methods of excavation, other analysis)
What are the major features found at this site?
What effect did this site have on other contemporary sites and on other later sites?
What may have caused the decline of this site's importance?
What are archaeologists trying to find out about this site now?
What evidence of civilization exists at this site?
What evidence of civilization does not exist here?
What do we know about the life of the people here?

Tikal

Describe the geographical features of this site.
When was this site occupied?
What archaeological techniques have been used at this site?
What are major features found at this site?
What information can be obtained by the hieroglyphs at this site?
What effect did this site have on other contemporary sites?
What does this site tell us about the life of the Classic Maya?
What may have caused the decline of this site's importance?
What may have happened to the people at this site?
How did Teotihuacan affect this site?

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INTERNET SITES

Both Tikal and Teotihuacan have multiple sites that may be accessed by using their names.